# Office of the City Auditor

# Information Systems Help Desk
# Report No. 0203

## October 27, 2003

The Information Systems Department has created an environment in which it is easy to request assistance with technology or telephone related equipment. There is little data, however, that can be used to gauge the efficiency and effectiveness in which the service is delivered.

**Office of the**
**City Auditor**

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October 27, 2003

To the Most Honorable Mary Manross, Mayor
and Members of the Scottsdale City Council

Transmitted herewith is our report outlining the results of an audit of the Help Desk program of the Information Systems (IS) Department. A summary of our recommendations and IS Management response can be found on page 2 of the report.

Sonny Phillips and Mary Modelski completed this project. We would like to thank staff in the Information Systems Department for their cooperation and timely assistance during the audit.

If you need additional information or have any questions, please contact me at 480-312-7756.

Respectfully submitted,

Cheryl Lee Barcala

Cheryl Barcala, CPA, CIA, CFE, CGFM, CISA, CISSP
City Auditor

## Table of Contents

# EXECUTIVE SUMMARY

An audit of the Help Desk program of the Information Systems (IS) Department was included on the Audit Plan for 2002/2003. The work was undertaken to provide assurance that sufficient controls are in place to monitor the activities associated with providing customer support. At the conclusion of the audit, IS Management was provided a copy of the report for review and comment. The complete text of their response is reproduced in Appendix A.

## Results in Brief

The IS Department has created an environment in which it is easy to request assistance if a user experiences problems with technology or telephone related equipment. Requests can be made via the Help Line (a telephone line dedicated to the Help Desk), an Intranet based application known as the Help Desk Expert Automation Tool (HEAT) or through the City's e-mail system. The procedures implemented by the IS Department provide adequate notice of requests for service. Help Desk assistance is provided 24 hours a day, seven days a week. Service level is monitored and work orders are tracked until completion. Customer surveys are used to gather data regarding the perception of customer service provided by the Help Desk. According to reports provided by IS Management, customer satisfaction averages 4.5 on a 5 point scale.

Technicians, interviewed during our audit, reported they had the proper tools to complete assigned job duties. They commented positively on management support for job rotation as well as the support they received from other teams within the IS Department.

While it is clear that the IS Department has created a responsive process to provide assistance, there is little data that can be used to evaluate the effectiveness and efficiency in which the program is carried out.

- A mission statement, objectives, and performance measures for the Help Desk have not been developed and documented. This information is the cornerstone of an adequate management control system; without it there is no basis for measuring, reporting, and monitoring a program's economy and efficiency.
- Expenditures necessary to provide the service are not tracked separately. Without this information it is impossible to determine the efficiency of service delivery and difficult to weigh alternative service options.

These issues and other suggestions for improvement in service delivery are addressed in more detail in the body of the report.

## Action Plan

| No. | Recommendations and Management Response |
|---|---|
| 1. | Develop and document a mission statement for the Help Desk program. The mission statement should include the:<br>• Customers to be served by the program.<br>• Roles and responsibilities of the staff assigned to the program.<br>• Types of services provided.<br>• Scope of operations. |
| | **Concur.** The Technical Support Supervisor will review and expand on the existing statement to better define the purpose and scope of the Help Desk.<br>**Responsible Party:** Technical Support Supervisor **Completed By:** 12/31/2003 |
| 2. | Develop and document clear, concise program objectives, desired outcomes, and performance measures. |
| | **Concur.** The Technical Support Supervisor will assure that technicians have defined performance goals and expected outcomes that align with defined objectives, outcomes, and performance of the Help Desk function.<br>**Responsible Party:** Technical Support Supervisor **Completed By:** 12/31/2003 |
| 3. | Segment the cost of the Help Desk program into a separate cost center within the Information Systems Department to facilitate tracking costs associated with this support program. |
| | **Concur.** The IS Departmental Advisor will work in a collaborative effort with the Budget Office to evaluate our existing programs and assess the potential benefits.<br>**Responsible Party:** IS Departmental Advisor **Completed By:** 12/19/2003 |
| 4. | Develop clear, concise key result areas for Technical staff assigned to the Help Desk program. |
| | **Concur.** The Technical Support Supervisor will assure that all IS technicians have defined KRAs (Key Results Areas), and are aware that their KRAs, with appropriate performance goals, are a part of their Individual Performance Plans.<br>**Responsible Party:** Technical Support Supervisor **Completed By:** 03/31/2004 |
| 5. | Develop and document requirements for minimum annual continuing education for technical staff and a requirement for cross training. |
| | **Concur.** The Technical Support Supervisor will develop a plan for technician cross-training and annual continued professional education for all technicians working under his supervision. This educational planning may require additional funding through the budget process, and will, therefore, vary in accordance with available funding.<br>**Responsible Party:** Technical Support Supervisor **Completed By:** 12/31/2003 |

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|---|---|
| 6. | Develop and implement a schedule that ensures adequate coverage by Network Engineers and Technicians during business hours. This schedule should include lunch schedules, flex days, and other non-coverage events that would result in employees with the same skill sets being away at the same time. |
| | **Concur.** Currently, all technical personnel are required to carry pagers during normal business hours. In specific response to this recommendation, a documented policy on Technical Support Coverage will be developed and communicated by the Technical Support Supervisor, in coordination with IS managers, to all IS staff. A copy of the policy will be posted to the IS Department Policy website.<br>**Responsible Party:** Technical Support Supervisor **Completed By:** 12/31/2003 |
| 7. | Develop and document policies and procedures outlining the activities of the Help Desk program. |
| | **Concur.** The Technical Support Supervisor will develop and maintain operational policies and procedures for the Help Desk in collaboration with the IS Daily Operations Team. Such items will be documented and communicated via the department's Intranet site.<br>**Responsible Party:** Technical Support Supervisor **Completed By:** 03/31/2004 |
| 8. | Develop a confidentiality statement and require IS staff to annually sign the statement. |
| | **Concur.** The Technical Support Supervisor, in concert with the Daily Operations Team, will work with the City's Legal and Human Resources Systems departments to formulate and implement a confidentiality document within Information Systems.<br>**Responsible Party:** Technical Support Supervisor **Completed By:** 06/30/2004 |
| 9. | Develop and document procedures to be followed when a request is submitted to reset a user password. |
| | **Concur.** The Applications Development Director will work on the development of a program that involves a series of pre-defined, individualized questions that our staff can ask of the requestor to establish identity. This program will provide consistency and strong control over the process.<br>**Responsible Party:** Applications Development Director **Completed By:** 03/30/2004 |
| 10. | Create a process that requires all inquires be logged. |
| | **Concur.** The Technical Support Supervisor will develop a methodology for capturing ACD (Automatic Call Distribution) calls.<br>**Responsible Party:** Technical Support Supervisor **Completed By:** 03/30/2004 |

| | |
|---|---|
| 11. | Investigate improvements to the HEAT system to provide the ability to:<br>• Prioritize customer queries so that future requests receive a lower priority and more urgent requests receive a higher ranking.<br>• Automatically notify a Technician when additional information or comments are added to a request.<br>• Assign work order numbers upon submission of the request instead of at the point of initial entry.<br>• Create an audit log to retain information about deletions or modifications to data in the HEAT system. |
| | **Concur.** IS does maintain an on-going relationship with the HEAT software vendor to pursue new features in their product. As participating members in the HEAT Users Group (HUG) and attendees at the annual HEAT User Conference, we have the ability to make known our requirements and suggestions for product improvements to the vendor's senior management. The Enterprise Systems Integrator will continue to test and implement those HEAT enhancements and upgrades that provide a benefit to the City.<br>**Responsible Party:** Enterprise Systems Integrator **Completed By:** Vendor release |
| 12. | Investigate using individuals within user departments who can provide first-line support and assist Help Desk staff with troubleshooting. Local resources could replace the need of dispatching a Technician into the field. |
| | **Concur.** The CIO will investigate the use of designated individuals within departments with senior department management.<br>**Responsible Party:** CIO/GM, IS **Completed By:** 06/30/2004 |
| 13. | Encourage communication between Technicians and IS Management by establishing a process for submission of suggestions for improvement. |
| | **Concur.** IS actively encourages this type of communication as a standard business practice. The Technical Support Supervisor will provide time for this purpose during the regular monthly staff meetings and in one-on-one sessions with technicians. In addition, a "feedback form" will be developed and made available to all IS staff for submitting suggestions within the department.<br>**Responsible Party:** Technical Support Supervisor **Completed By:** Ongoing |
| 14. | Develop and document performance expectations for customer satisfaction and implement a survey process that solicits feedback. |
| | **Concur.** The Technical Support Supervisor, in concert with the Daily Operations Team, will develop goals for this item and document a process for measuring customer satisfaction.<br>**Responsible Party:** Technical Support Supervisor **Completed By:** 03/30/2004 |
| 15. | Restrict the number of employees having administrative rights in HEAT. |
| | **Concur.** The Technical Support Supervisor will review the number of staff having such rights with the Daily Operations Team annually to assure that the number of staff is kept to a minimum that is consistent with operational and managerial needs.<br>**Responsible Party:** Technical Support Supervisor **Completed By:** Annual |

## BACKGROUND

To ensure that the technology provided can be used, an IS Department must be positioned to provide assistance and advice when problems are encountered. To provide this support, the City's IS Department has created a Help Desk program. The Help Desk, with a dedicated phone line, is staffed by two Technicians between the hours of 7 a.m. and 5 p.m., Monday through Friday. Calls after hours and on the weekends are forwarded to the Computer Operations Center. If the Computer Operations staff cannot resolve the issue, on-call staff can be paged. Through this arrangement, customer support is provided 24 hours a day, 7 days a week.

### Assistance Provided Through the Help Desk

Calls to the Help Desk, generally, fall into the following categories:

- Questions about Outlook (i.e., why is it not working).
- Problems accessing a network device or server.
- Assistance in completing a function such as setting up personal folders.
- Password maintenance such as resetting passwords if forgotten or disabled.
- Internet connectivity issues.
- Assistance with a personal computer (PC) or other hardware malfunction.

As well as providing first-line customer support, the Help Desk serves as the central point for processing requests such as:

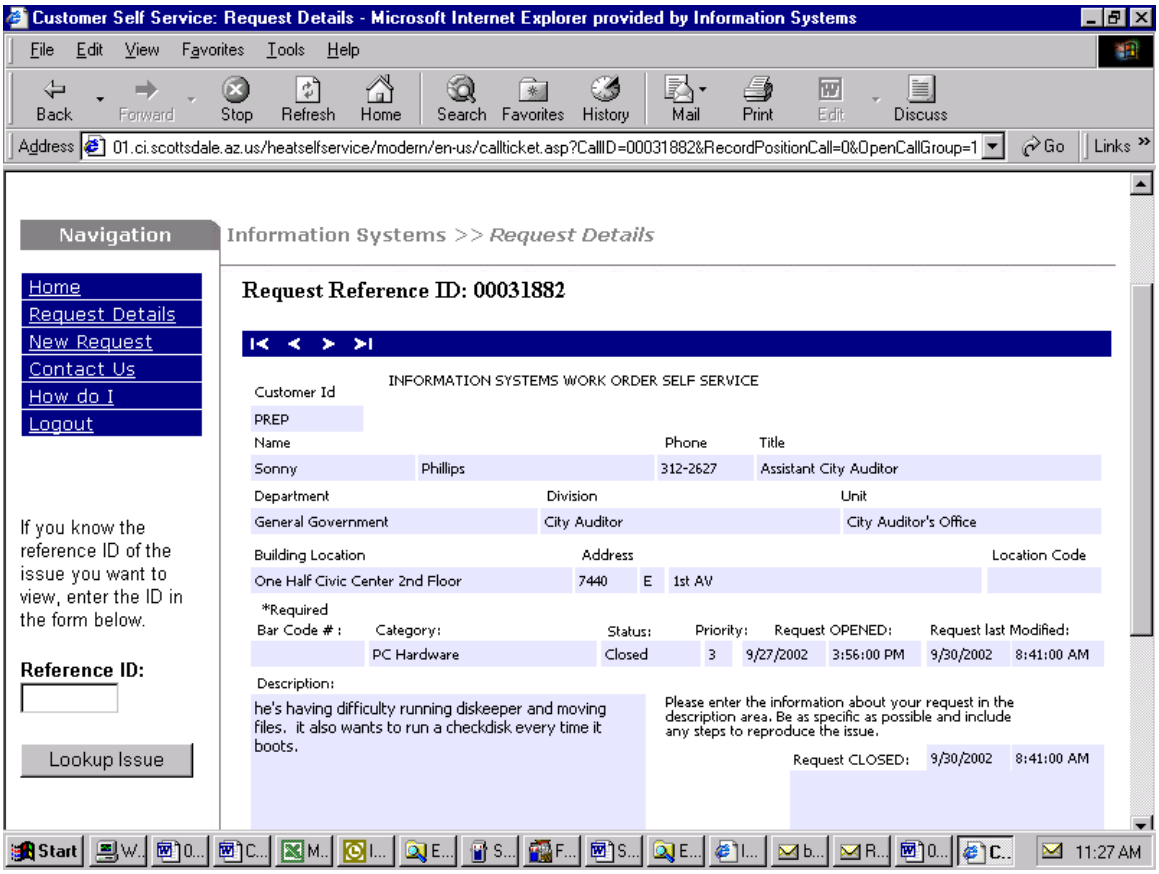
- Equipment repairs.
- Moving computer or telecommunications equipment.
- Delivering and setting up of new equipment.
- Adding new software to existing computers.

The Help Desk also provides limited support for department specific applications such as WebTime, the system used by Payroll for timekeeping, or SmartStream, the financial application. In most cases, requests for assistance are referred to the subject matter expert within the various departments; however, Computer Operations can reset WebTime passwords after normal business hours.

## Initiating a Request for Assistance

Requests for assistance can be initiated in one of three ways. First, an employee can initiate a request by placing a phone call to the Help Line, a call center form of interaction in which the Technician (or Computer Operator, if the call is after hours) attempts to resolve the issue while the user is on the phone. If the initial phone call cannot be concluded successfully, the Technician or Operator will escalate the call by creating a work order and assigning the issue to an IS staff member with the appropriate expertise. Secondly, any user with access to the City's Intranet site can access HEAT, and initiate a work order (see the insert below for an example of a self service work order). Finally, users can e-mail or phone an IS Department staff member with a request or issue. The staff member receiving the e-mail or call will, if appropriate, enter a work order to initiate resolution.

**HEAT Service Request Information**



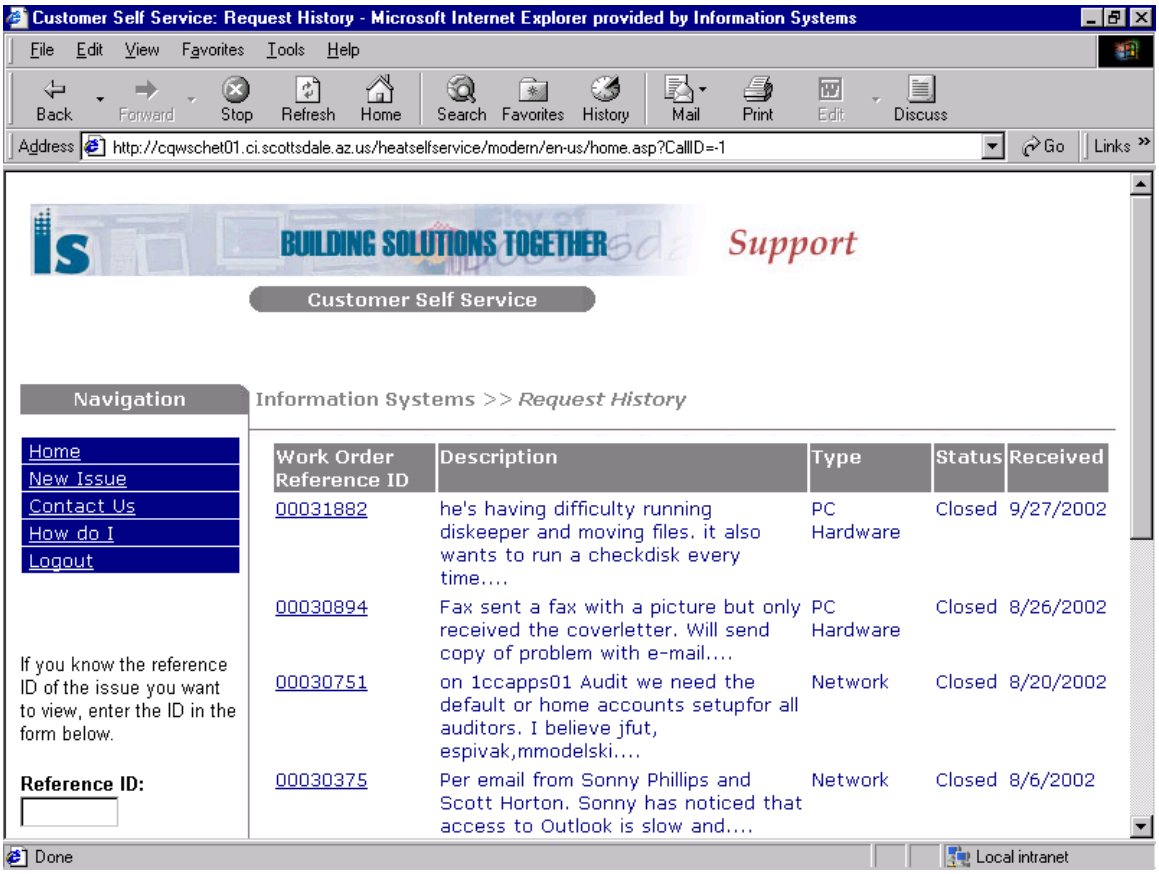

**SOURCE:** HEAT Intranet website.

## Tracking Requests

A system known as Automatic Call Distribution (ACD) sequences calls placed to the Help Line and collects metrics such as the number of calls received, overall wait time, and the number of calls abandoned. The system captures, through the use of a "quick code" that is input by the Technician, a general description of the nature of the service request.[1]

Work orders entered into HEAT can be tracked because each request is assigned a unique sequential number with a time and date stamp. The system sends a notice to the appropriate Supervisor if a Technician fails to acknowledge a work order within 24 hours. A second notice is sent in 72 hours if there is still no acknowledgment. Through this process, the status of work orders can be monitored and issues can be resolved in a timely manner. The example below shows the history that is available on the HEAT system.

**Request History on HEAT Service Requests**




**SOURCE**: HEAT Intranet website.

[1] This information is not captured if the call is terminated before the quick code can be input.

## Assigning Work Orders

HEAT does not automatically assign personnel to work orders so a Technician assigned to the Help Desk routes requests. For workload balancing, a drop down menu within HEAT allows the Technician to see the number of calls assigned to various IS staff. After a work order has been routed, it is the responsibility of the person assigned the request to notify the Help Desk if other arrangements need to be made to ensure that the work is completed in a timely manner.

## Qualifications and Training

Help Desk Technicians must have completed an accredited electronics course or have the equivalent training. One year of experience in computer repair is required. The IS Department does not have a formalized training schedule but cross training in-house is encouraged and permitted when schedules allow. The Technical Support Supervisor, who reports to the Enterprise Director, oversees the duties carried out by the Technicians.

## Performance Expectations

The IS General Manager/Chief Information Officer (GM/CIO) is responsible for the development of performance goals and measures for the IS Department. For the Help Desk, there are no formal, documented performance goals but the GM/CIO verbally stated the following expectations for the Help Desk:

- Technicians resolve 50 percent of calls at first point of telephone contact.
- Achieve a customer satisfaction rating of 4.7 to 4.8 out of a possible 5.0.

To monitor customer satisfaction, the IS Department developed an application that e-mails a survey to the requestor listed on every 10th work order placed into HEAT.[2] The request seeks a rating on initial contact, effectiveness, response, and communication. Each category has a scale of one to five, five being the highest. A summary of 2002 survey results is presented below.

June

October

| | |
|---|---|
| Number of surveys sent | 580 |
| Number of responses received | 158 |
| °Lowest month response rate | 7 |
| Highest month response rate | 22 |
| Average responses received per month | 13 |
| Overall average satisfaction score | 4.53 |

Initial Contact 4.63
Effectiveness 4.43
Response 4.48
Communication 4.58

**Source: Audit analysis of survey data provided by the IS Department.**

[2] A call to the Help Line will not be included within the population used for the survey unless a work order is entered into HEAT.

The number of calls received, work orders closed by the first assigned staff, and the total number of outstanding work orders are reviewed by IS Management two to three times a week. On a bi-monthly basis the Technical Support Supervisor reviews the results of customer satisfaction surveys.

There are external organizations that establish standards that can be used to measure performance for a program such as the Help Desk. For example, the Information Systems Audit and Control Foundation (ISACF) lists the Help Desk program as a high-level control objective for Information Technology organizations. The following expectations are included within this objective.

- Individuals responsible for performing the Help Desk program should closely interact with problem management personnel.
- Procedures should be in place to ensure that the Help Desk adequately registers all customer queries.
- Procedures should ensure that customer queries that cannot be resolved are appropriately escalated.
- Procedures should include timely monitoring of the clearance of customer queries. Long outstanding queries should be investigated and acted upon.
- Procedures should assure adequate reporting with regard to customer queries and resolution, response times, and trend identification. The reports should be adequately analyzed and acted upon.

As well, additional information is available from the Call Industry Advisory Council (CIAC). This organization was established in 1998 as an objective third party to establish and maintain industry-recognized competency standards for individuals that lead, manage, and work in call centers. CIAC developed, and supports, certification in four management track designations each having a separate competency framework.

**Financial Impact**

The Help Desk has not been set up as a sub-program within the IS budget. As such, there is no historical information regarding the cost of providing this service.

## INTRODUCTION

Generally Accepted Government Auditing Standards (the Yellow Book) define a performance audit as an objective and systematic examination of evidence for the purpose of providing an independent assessment of the performance of a government organization, program, activity, or function. Performance audits are conducted in order to provide information to improve public accountability and facilitate decision making by parties with responsibility to oversee or initiate corrective action. These audits generally fall into two categories: program audits and efficiency and effectiveness audits.

Program audits look at:

- Whether objectives are proper, suitable, or relevant.
- The extent to which a program achieves a desired level of results.
- The effectiveness of the program.
- Any factors that inhibit satisfactory performance.
- Whether management has considered alternatives for carrying out the program that might yield desired results more effectively or at a lower cost.
- Ways to make the program work better.
- The adequacy of management controls for measuring, reporting, and monitoring effectiveness.
- Whether management has defined program measures that are valid and reliable.

Efficiency and effectiveness audits focus on determining if a program is acquiring and using resources economically and efficiently and the causes of inefficiencies or uneconomical practices. These audits look at:

- Procurement practices, avoiding duplication of effort and idleness, and using efficient operating procedures.
- Management controls for measuring, reporting, and monitoring a program's economy and efficiency.
- Whether measures of economy and efficiency have been established and if they are valid and reliable.

We structured our work to provide an assessment of the Help Desk program and provide information that would improve public accountability. To make a determination about the effectiveness of the program, we used control objectives set by the ISACF. These objectives are documented in "COBIT: Governance, Control and Audit for Information and Related Technology."

Based on work performed, we found that the IS Department has established a Help Desk program that is sufficient to meet the ISACF suggested control objective "Assist and Advise Customers." The Technicians responsible reported that they had the tools and management support necessary to carry out an effective Help Desk program. Additionally, customer survey responses reported a high satisfaction with the level of service provided.

However, we found little information available that could be used to determine if the program was achieving the desired results set by IS Management. Suitable and relevant objectives have not been established and there are no written performance measures. For the objectives that have been set, there is no effective way to determine if they are being achieved.

IS Management has not considered other alternatives for providing functions related to the Help Desk that might achieve objectives more effectively or at a lower cost. Expenditures related to the Help Desk program are not tracked separately from other types of technology support activities to facilitate a comparison of the cost of the program to the outcomes.

As well, IS Management has not established a sufficient level of control to ensure that the program is effective and efficient. Policies and procedures, for routine activities carried out by staff assigned to the Help Desk or those responsible for issue resolution, do not exist. There is no requirement for annual continuing education to ensure that Technicians remain technically competent. IS Management has not developed a formal cross training program to ensure that specific job skills are not lost if staff leave or move to other departments within the City.

While there are reports available for activities such as the number of queries and response times, we found issues with the logging and tracking of calls into the Help Line and could not verify the numeric sequencing of work orders. As a result, the information captured and reported regarding the number of calls is not valid. Also, administrative rights are not restricted sufficiently to adequately protect information within the HEAT database.

Finally, there is no indication of a procedure to look for trends in calls. Trend analysis can be used to identify situations in which targeted training opportunities could reduce calls.

The following pages include a brief summary of issues we found and recommendations designed to improve the operations of the Help Desk.

## RECOMMENDATIONS

### RECOMMENDATION #1

Develop and document a mission statement for the Help Desk program. At a minimum, the statement should identify the:

- Customers to be served by the program.
- Roles and responsibilities of staff assigned to the program.
- Types of services provided.
- Scope of operations.

***Criteria***
A purpose statement (i.e., mission statement) provides the target in which to direct resources. This statement should be documented in a clear, concise fashion to facilitate the development of program objectives.

***Condition***
A written mission statement for the Help Desk program has not been developed. During our audit, the Technical Support Supervisor for the program provided us a copy of a PowerPoint presentation that was used during an internal discussion in the IS Department shortly after the Technical Support Supervisor started with the City. According to this document, the purpose of the Help Desk program is:

> *To provide the City of Scottsdale with a competent and confident technology support team.*

This mission statement, while perhaps setting the foundation for a statement of purpose, does not articulate the "why" element of a purpose statement.

***Cause***
The Help Desk program is not considered a "program" in the context of budgeting. As such, there has been no requirement for development of a mission statement and objectives as a condition of justifying ongoing expenditures.

***Effect***
The mission statement serves as the foundation for program direction. Without a clearly defined purpose, it is difficult to set more specific goals and objectives that could be used to measure the results of efforts. Without these specific goals and outcomes, there is little information that can be used to ensure that IS Management is accountable for an effective and efficient program.

**RECOMMENDATION #2**

Develop and document clear, concise program objectives, desired outcomes, and performance measures.

***Criteria***
The key criterion to assessing performance is the degree to which a program is meeting its objectives. In order for objectives to be valid, they should flow from a statement that defines why a program is undertaken. The objectives then become the specific targets that provide direction to staff.

*Effectiveness – generally measured in terms of outputs (how much) and outcomes (how well).*

*Efficiency – generally measured in terms of the cost per output and the cost per outcome.*

***Condition***
There are no written objectives, outcomes, or performance measures for the Help Desk program. IS Management verbally provided goals for staff performance (i.e., percentage of requests cleared at first point of contact or the level of customer satisfaction) but there were no program goals.

According to the Fiscal Year 2002/2003 budget book, one of the objectives of the Technology Infrastructure Support Division of the IS Department is:

> *Staff and maintain a Technical Support operation that provides 24x7 Help Line, and Technical Field support for the 2,100 personal computers and 2,800 telephones throughout the City.*

***Cause***
The Help Desk program is not considered a "program" in the context of budgeting. As such, there has been no requirement for development of objectives as a condition of justifying ongoing expenditures. Moreover, the cost of providing the service is not tracked separately from other IS activities so it would be difficult to determine the cost portion of the "efficiency" measure.

***Effect***
Without clear, specific goals and objectives, there is little information that can be used to ensure that IS Management is accountable for an effective and efficient program. As currently structured, there is no historical information that could be used to evaluate the level of funding to the level of service provided as a means of evaluating other alternatives.

Moreover, without a formal procedure to identify goals and objectives, there is a risk that goals will be set without an effective way to measure the outcome. For example, the GM/CIO stated that he issued a verbal challenge to Technicians to the effect that 50 percent of initial requests were to be resolved by first-line support. IS Management, however, stated that they do not have the ability to determine the percentage of requests resolved by first-line support.

**RECOMMENDATION #3**

Segment the cost of the Help Desk program into a separate cost center within the IS Department to facilitate tracking costs associated with this support program.

***Criteria***
The City Council adopts Comprehensive Financial Policies annually to set guidelines against which current budgetary performance can be measured and proposals for future programs can be evaluated.

Operational Management Policy #14 states:

> *Alternative means of service delivery will be evaluated to ensure that quality services are provided to our citizens at the most competitive and economical cost. Departments, in cooperation with the City Manager, will identify all activities that could be provided by another source and review options/alternatives to current service delivery. The review of service delivery alternatives and the need for the service will be performed annually or on an "opportunity" basis.*

***Condition***
Currently, the Help Desk program is considered part of the Technology and Infrastructure Support Division within the IS Department. The Fiscal Year 2002/2003 budget for this combined Division, with an approved full-time staffing level of 37 employees, was $3,989,491.

There has been no review or comparison, within the IS Department, of the cost of providing the Help Desk program internally to the cost of service provided by an outside firm.

***Cause***
There has been no need to evaluate sub-program expenditures within the IS Department because the Department is not considered an internal service fund with a requirement to develop a charge back program.

***Effect***
Historical data is not available to facilitate a consideration of alternative service delivery for components of the IS Department such as the Help Desk program as a means of ensuring the services are provided at the most competitive and economical cost.

**RECOMMENDATION #4**

Develop clear, concise key result areas for Technical staff assigned to the Help Desk program.

***Criteria***
Key result areas identify the major outcomes for which an employee is responsible. For each key result area, specific objectives are to be defined to set out what the employee is to accomplish.

***Condition***
Key result areas for Technical staff assigned to the Help Desk program had yet to be developed.

***Cause***
According to IS Management, a large number of Technicians had received their performance evaluation prior to the implementation of a new citywide performance evaluation system. New measures will be developed and implemented with the start of the new fiscal year.

***Effect***
Without the communication of clear, concise key result areas for staff assigned to the Help Desk program, there is a potential for staff to be uncertain as to the actual outcomes that they are responsible for. Additionally, there is a potential for evaluation of staff, assigned similar job duties, to be based on inconsistent criteria.

**RECOMMENDATION #5**

Develop and document requirements for minimum annual continuing education for technical staff and a requirement for cross training.

***Criteria***
The technical competency of staff is a key criterion in a successful Help Desk program. The technology environment changes constantly. This rapid evolution often makes prior technical skills obsolete. To address the rapidly changing environment, an ongoing educational program must be in place to ensure staff maintains a minimum acceptable level of proficiency.

***Condition***
IS Management has not developed nor documented a program of technical competency for staff. There is no standard for continuing education as a component of the job duties for Technical staff and no requirement for cross training within the IS Department.

Department Management is, however, supportive of job rotation. Technicians we spoke to commented positively about IS Management support of requests to learn new job skills.

***Cause***
Technical skills do not receive the same level of support for continuing education as do professional level skills that often require a minimum level of continuing education hours as a condition of maintaining certifications or licenses.

***Effect***
The City is potentially at risk should skilled staff leave. Without a requirement for continuing education and cross training, enforced in a consistent fashion, staff transition may create a skills gap within the Department.

**RECOMMENDATION #6**

Develop and implement a schedule that ensures adequate coverage by Network Engineers and Technicians during business hours. This schedule should include lunch schedules, flex days, and other non-coverage events that would result in employees with the same skill sets being away at the same time.

***Criteria***
The Help Desk should be staffed at times when assistance is needed; other staff with technical skills should be available to provide support services that cannot be completed by Technicians.

***Condition***
The Help Desk is staffed, at a minimum, with one Technician from 7 a.m. to 5 p.m., Monday through Friday. The Help Desk phone line is forwarded to Computer Operations after hours. An on-call list is maintained for issues requiring immediate attention.

There is no requirement, however, for minimum levels of coverage at the Network Engineer or Technician level to avoid the potential for all employees with the same set of skills to be away from the office at the same time.

***Cause***
The IS Department has not addressed the impact of scheduling.

***Effect***
Staff necessary to respond to immediate issues may not be available.

**RECOMMENDATION #7**

Develop and document policies and procedures outlining the activities of the Help Desk program.

***Criteria***
Written policies and procedures serve to set boundaries for staff and allow them to operate without constant intervention.

***Condition***
Written policies and procedures have not been developed. During our audit, we reviewed the "Technology Infrastructure Support, Policies and Guidelines" provided by IS Management. The document does not include unique situations that apply to the Help Desk. For example, it does not:

- Require service requests to be entered into a centralized system.
- Document protocols for taking control of a user system for diagnosis of problems.
- Address posting of notice, internally, within IS for network problems and downtimes.
- Discuss how to notify the North Campus Help Desk Technicians when they are to take responsibility for the main Help Line.
- Require keeping customers informed about the status of service requests.

***Cause***
Top Management has not set the expectation for, nor required development of, sufficient policies and procedures at the sub-program level.

***Effect***
Failing to provide complete instructions to the Help Desk staff through policies and procedures increases the opportunity for staff to conduct themselves in an inconsistent and nonprofessional manner. This inconsistency may hinder efforts to meet departmental objectives for service and result in poor performance evaluations because staff is not sufficiently informed.

Moreover, the failure to document established procedures creates a situation in which baseline knowledge of the operations of the Help Desk program exists only in the current employee base. As a result, significant information could be lost if key employees left the department or organization.

**RECOMMENDATION #8**

Develop a confidentiality statement and require IS staff to annually sign the statement.

***Criteria***
Staff who potentially have access to confidential and/or privileged information should be required to sign an annual confidentiality statement as evidence that they are aware of the requirement to maintain, in a confidential manner, any information that they might become aware of when responding to a user query.

***Condition***
The City does not have a requirement for an annual confidentiality statement, and IS Management has not developed a departmental policy on confidentiality.

***Cause***
The organization does not have an advocate to champion the need for an administrative regulation on confidentiality.

***Effect***
Technicians and other staff in IS often have access to confidential and/or privileged information that is retained on desktops or the servers. If an employee were to disclose confidential information, the City would be at a disadvantage in pursuing action against the employee due to lack of a signed confidentiality statement.

**RECOMMENDATION #9**

Develop and document procedures to be followed when a request is submitted to reset a user password.

***Criteria***
Passwords are used to control access to critical computer systems and data retained within the network. Sufficient controls must be in place to verify the identity of a user prior to responding to a request to reset a password.

***Condition***
In practice, Technicians will reset a password based on user request if 1) the Technician recognizes the voice of a user or 2) the user can provide the last four digits of their social security number. In order to verify the number provided, Technicians have access to a list names and the last four digits of employees' social security numbers.

This method is informal. Policies and procedures have not been developed to document the steps used to verify the user nor protection of the employee's last four social security digits.

***Cause***
The historic culture of the organization has not reinforced the need for sufficient policies and procedures.

***Effect***
Without established policies and procedures, there is a risk of inconsistent treatment. As well, there is no historical record of the practice.

**RECOMMENDATION #10**

Create a process that requires all inquiries be logged.

***Criteria***
Procedures should be in place to ensure that all customer queries to the Help Desk are registered.

***Condition***
There is limited assurance that all customer queries are registered for tracking, analytical analysis, or customer survey because the IS Department uses two separate systems to capture customer queries. The first system known as ACD, tracks queries placed through the Help Line, a phone line dedicated to the Help Desk. Tracking under this system requires the Technician receiving the call to enter a disposition code prior to the customer disconnecting the call. If the code is not entered, the system will not log the query. ACD does not capture relevant information such as the name of the caller, method of problem resolution, or identification of the equipment with the problem.

The second system is HEAT. Customer queries entered on-line or calls to the Help Desk elevated to the next level create a work order, which is then tracked in HEAT. Technicians are instructed to enter calls into HEAT if the disposition code was not entered into ACD.

***Cause***
Disparate systems.

***Effect***
There is a high risk that customer queries will not be tracked. During our audit, we observed the staff of the Help Desk for a two-hour period. We manually tracked calls and then requested reports from the ACD and HEAT systems. Of the 24 calls placed during our observation, we could only track 14 to system generated reports.

Without consistent information regarding the number, type, and resolution of customer queries, IS Management may base decisions on erroneous data.

## RECOMMENDATION #11

Investigate improvements to the HEAT system. Improvements should include the ability to:

- Prioritize customer queries so that future requests receive a lower priority and more urgent requests receive a higher ranking.
- Automatically notify a Technician when additional information or comments are added to a request.
- Assign a work order number upon the submission of the request instead of at the point of initial entry.
- Create an audit log to retain information about deletions or modifications to data in the HEAT system.

### *Criteria*

Automated work order systems should facilitate scheduling of work, provide Technicians with access to relevant information, provide a process to identify outstanding customer queries for potential escalation, and facilitate management reporting.

### *Condition*

HEAT provides the ability to assign a work order to a specific Technician. The assignment, though, must be done manually.

Once a work order is assigned, the system tracks the time between assignment and Technician acknowledgement to provide information about the length of time a customer request sits in the system. If a work order sits in the system more than 24 hours without acknowledgment, HEAT sends a notice to the Technical Support Supervisor. After 72 hours, if the Technician still has not acknowledged the service request, a second notice is sent to the Technical Support Supervisor. Once a work order is acknowledged, the system begins to track the time to completion.

HEAT also has a journal page that can be used to provide additional instructions or data. This page can be used to provide specific direction as to the type of work that needs to be completed.

Finally, HEAT tracks the total population of requests and can serve as the data source for recipients of customer surveys and management reports such as the number and type of queries entered.

However, HEAT assumes that all customer queries require immediate action. This is not always the case. For example, the Help Desk receives requests for future office moves as well as requests to setup computers for employees with a future start date. Secondly, HEAT does not alert the Technician if comments are placed on the journal page. These comments may instruct a Technician to bring specific equipment or parts. This may cause a Technician to spend unnecessary time troubleshooting a problem or possibly require rescheduling a visit. Finally, HEAT does not retain sufficient data to create a list of numerically sequenced work orders. IS Management does not have the ability to determine whether a service request was cancelled intentionally by an administrator, or if a customer chose to stop completion of a request prior to submission.

***Cause***
System design.

***Effect***
The failure to allow prioritization or future scheduling creates a situation in which a Technician must choose to either 1) acknowledge the request to avoid having a notice sent to the Technical Support Supervisor or 2) ignore the requirement to acknowledge the request and then deal with the fact that a notice is sent to the Technical Support Supervisor. If the Technician acknowledges the request, HEAT starts tracking the days the request is open. If the request is simply ignored until the due date, the supervisor must spend time to research a request and conclude that there is no issue with the timing.

Technicians can potentially spend unnecessary time working on a service request because they were not aware of additional information entered on the journal page. To avoid this potential problem, additional steps such as verbal communication must take place to ensure that a Technician is aware of the information entered on the service request.

Without a requirement for consistent numerical sequencing, it would be difficult to identify a situation in which a work order was deliberately deleted from the system. For example, we obtained the first work order number issued in January 2002 and the last ticket number issued in December 2002. Based upon the difference in ticket numbers, it appears that 8,768 work orders were created during 2002. However, the Technical Support Supervisor provided reports indicating that 5,804 work orders were closed. This represents a difference of 2,964.

The Technical Support Supervisor was asked to explain the difference between service request ticket numbers created and those actually closed. Gaps were explained as service requests initiated by a user but not submitted, requests created during testing of the system, or requests removed from the system by administrators. According to the Senior Technician, Technical Support Supervisor, and Enterprise Systems Integrator, an audit log is not maintained to document the reason why a request was removed from the system, the date the action occurred, or the person completing the action.

**RECOMMENDATION #12**

Investigate using individuals within user departments who can provide first-line support and assist Help Desk staff with troubleshooting in situations where local resources could replace the need of dispatching a Technician into the field.

***Criteria***
Effective and efficient use of resources can decrease the cost of providing a service.

***Condition***
Many departments within the City use a specialized or customized computer application and have at least one internal staff member to assist in supporting this application. The purpose of the staff member is to deliver more effective and timely service to the department because of their advance training in the department specific application and/or network environment. The title of this super user can range from a Technology Coordinator to a Senior Systems Integrator.

We asked Technicians if they were aware of who the super users were in departments with specialized or custom applications. If not, we asked if they had access to a listing of departmental super users. Technicians reported they were not aware of such a listing, but over time have come to learn who super users were within departments with a great deal of application or network problems.

***Cause***
Historical practice.

***Effect***
We spoke with IS Management to learn how effective the use of super users were within departments with specialized or customized applications. IS Management stated they had not developed a means to measure the effect super users had on the number of service calls received by the Help Desk or the amount of time it takes a Technician to resolve a problem with the assistance of a super user. IS Management could not provide data to substantiate the benefit of departmental super users.

**RECOMMENDATION #13**

Establish a practice in which Technicians can submit suggestions for improvement in service delivery and encourage communication between IS Management and line employees.

***Criteria***
Performance improvement initiatives should be identified and executed to provide a commitment to ongoing improvement in service delivery.

***Condition***
We found no indication of an ongoing effort to solicit suggestions from Technicians.

***Cause***
Unknown.

***Effect***
IS Management may be missing the opportunity to implement changes that would improve Help Desk operations and result in more responsive customer service. Moreover, IS Management is missing the opportunity for expanded dialogue with Technicians to learn of potential areas of improvement.

For example, Senior Technicians and Technicians were asked where areas of improvement could be made within the Help Desk program and the Enterprise. Technicians offered suggestions such as standardizing software and hardware platforms so that they could become more proficient on troubleshooting common problems associated with the platforms. This proficiency could then lead to proactively implementing manufacturers' patches and providing a pool of equipment that could be pulled from when equipment malfunctions.

**RECOMMENDATION #14**

Develop and document performance expectations for customer satisfaction and implement a survey process that solicits feedback.

***Criteria***
User satisfaction level should be periodically determined and reported.

***Condition***
IS Management has established a goal related to customer satisfaction. According to the Technical Support Supervisor, the desired range is a rating 4.7-4.8 out of a maximum of 5.0. This rating is based upon averaging the results of the four-question survey. To determine customer satisfaction, an e-mail survey is sent to the person submitting the request whenever a work order number ends in "three." The theory is one out of ten requests should receive a survey. The goal and practice used to determine customer satisfaction is undocumented.

We found the process is insufficient. First, the survey method completely disregards the population of service requests captured in the ACD system. Secondly, the service request can be initiated by someone other than the actual user (i.e., a secretary placing a request on behalf of a Department Manager). Therefore, the survey may not be sent to the actual service recipient. Finally, the response to the e-mail survey is low and there is no procedure in place to follow-up if a response is not received. For 2002, 580 surveys were sent; 158 responses were received. This is a 27 percent response rate.

***Effect***
Data obtained to monitor customer satisfaction levels may be skewed.

**RECOMMENDATION #15**

Restrict the number of employees having administrative rights in HEAT.

***Criteria***
Controls should be in place to reduce the potential for data to be manipulated either intentionally or deliberately.

***Condition***
The administrator level allows the purging of captured work orders and historical data. Currently, twelve employees and three service accounts within the IS Department have administrator rights under the HEAT system. Employees with this level of rights included: Computer Operator, Senior Computer Operator, Technician, Senior Technician, Enterprise Systems Integrator, Technical Support Supervisor, and Enterprise Director.

***Cause***
Inadequate procedures to ensure that administrative rights are adequately restricted.

***Effect***
There is limited assurance that the database integrity is not compromised.

## OBJECTIVES, SCOPE, AND METHODOLOGY

The objectives for this audit were to determine if:

- The function is adequately structured to ensure consistent and efficient customer response. At a minimum, management should have:
  - Identified the customer.
  - Developed and communicated:
    - A mission statement.
    - Roles and responsibilities for the function.
    - Key performance objectives and service level goals.
    - Performance objectives and measurements for technicians.
- Management oversight is appropriate through periodic review of key performance objectives and the service level achieved. Procedures, at a minimum, should ensure that:
  - All queries are registered and the:
    - Process to register requests is documented and adequately communicated.
    - Authorization to purge, close, or archive requests is limited.
  - Reports are routinely generated and reviewed to:
    - Identify trends in type of requests and resolutions.
    - Evaluate response times.
    - Identify long-standing queries still needing resolution.
    - Undertake statistical analysis of resource allocation.
  - Customer satisfaction is monitored through the use of customer surveys.
- Requests for assistance are appropriately and timely resolved through:
  - Use of properly trained technicians that have adequate authorization, rights, tools, and support.
  - An established hierarchy to escalate problems that cannot be resolved.
  - Customer notification when corrective action is scheduled.
  - Development and use of a knowledge base to resolve problems quickly.
  - Establishment of responsibility for clearance of long-standing requests.
  - Sufficient utilization of departmental integrators through establishment of parameters and appropriate training.
  - Procedures that safeguard assets by requiring validation of users prior to password resets.
- Management actively seeks opportunities to reduce the need for first-line support and problem resolution through:
  - Transfer of knowledge.
  - Identification of areas for improvement.
- Any other issues exist which may require review.

The scope of the audit was limited to the Help Desk program of the Information Systems Department and efforts made to respond to questions or concerns related to hardware, software, peripheral devices, and telephone equipment. We did not solicit employee or user feedback regarding the level of satisfaction with the services offered by the Help Desk.

Audit work was conducted in accordance with generally accepted government auditing standards as they relate to expanded scope auditing as required by Article III, Scottsdale Revised Code, §2-117, *et. seq*. Sonny Phillips and Mary Modelski were assigned to the audit.

To complete the work, criteria were developed to serve as the standards for evaluation. Performance measurements identified by IS Management, documented policies and procedures, and control objectives developed by the ISACF served as the foundation for the criteria. We also reviewed industry standards set out by the CIAC to determine whether or not these standards were appropriate for the type of services provided by the Help Desk.

Support for our conclusions was obtained by interviewing IS Management (including the GM/CIO), the Technical Support Supervisor, Technicians (those assigned to the Help Desk as well as those responsible for responding to requests), and an Enterprise Systems Integrator. As well, the auditors met with Technicians in a group setting (without management presence) to gain an understanding of their perception of authority, rights, support, and the adequacy of tools necessary to carry out their assignments.

To determine if adequate controls existed to control information within HEAT, we reviewed the number of individuals assigned administrative rights and the job assignments of those individuals. We obtained reports generated by HEAT and ACD to analyze details of captured information regarding call volume and issues. We also requested copies of management reports used to evaluate the performance of the Help Desk and staff assigned to the program.

We observed the process of the Help Desk during normal business hours to gain an understanding of how the program worked. As part of the observations, we logged calls to trace back to HEAT and ACD to determine whether or not information within these two applications was reliable.

## APPENDIX A – IS MANAGEMENT RESPONSE

September 25, 2003

To: Jan Dolan, City Manager

From: Brad Hartig, Interim CIO & General Manager - Information Systems Department

Management Response to Information Systems Help Desk Review (Audit No. 0203)

Information Systems departmental management has received and reviewed a draft copy of the subject Internal Audit Report (Audit No. 0203 – dated August 1, 2003). We appreciate Internal Audit's review of our Help Desk operation and have considered the findings and recommendations made by the Audit team in the course of this review.

The Audit team developed 15 specific recommendations for our consideration and potential implementation. This response is structured to provide an itemized listing of the Internal Audit (IA) Department's recommendations and our comments relative to each.

**Recommendations/Responses**

1. Develop and document a mission statement for the Help Desk.

   IS concurs with this recommendation. The Technical Support Supervisor will review and expand on the existing statement to better define the purpose and scope of the Help Desk.

   Responsible Party - Technical Support Supervisor
   Completion Date – December 31, 2003

2. Develop and document clear, concise program objectives, desired outcomes and performance measures.

   IS concurs with this recommendation. The Technical Support Supervisor will assure that technicians have defined performance goals and expected outcomes that align with defined objectives, outcomes, and performance of the Help Desk function.

   Responsible Party - Technical Support Supervisor
   Completion Date – December 31, 2003

3. Segment the cost of the Help Desk into a separate cost center within the IS Department to facilitate tracking costs associated with this function.

IS concurs with this recommendation. The IS Departmental Advisor will work in a collaborative effort with the Budget Office to evaluate our existing programs and assess the potential benefits.

Responsible Party - IS Departmental Advisor
Completion Date – December 19, 2003

4. Develop clear, concise key result areas for Technical staff assigned to the Help Desk program.

   IS concurs with this recommendation. The Technical Support Supervisor will assure that all IS technicians have defined KRAs, and are aware that their KRAs, with appropriate performance goals, are a part of their Individual Performance Plans.

   Responsible Party - Technical Support Supervisor
   Completion Date – March 31, 2004

5. Develop and document requirements for minimum annual continuing education for technical staff and a requirement for cross training.

   IS concurs with this recommendation. The Technical Support Supervisor will develop a plan for technician cross-training and annual continued professional education for all technicians working under his supervision. This educational planning may require additional funding through the budget process, and will therefore vary in accordance with available funding.

   Responsible Party - Technical Support Supervisor
   Completion Date – December 31, 2003

6. Develop a schedule that ensures adequate coverage by Network Engineers and Technicians during business hours. This schedule should include lunch schedules, flex days, and other non-coverage events that would result in employees with the same skill sets being away at the same time.

   IS concurs with this recommendation. Currently, all technical personnel are required to carry pagers during normal business hours. In specific response to this recommendation, a documented policy on Technical Support Coverage will be developed and communicated by the Technical Support Supervisor, in coordination with IS managers, to all IS staff. A copy of the policy will be posted to the IS Department Policy website.

   Responsible Party - Technical Support Supervisor
   Completion Date – December 31, 2003

7. Develop and document policies and procedures outlining the activities of the Help Desk program.

   IS concurs with this recommendation. The Technical Support Supervisor will develop and maintain operational policies and procedures for the Help Desk in collaboration with the IS Daily Operations Team. Such items will be documented and communicated via the department's Intranet site.

   Responsible Party - Technical Support Supervisor
   Completion Date – March 31, 2004

8. Develop a confidentiality statement and require IS staff to annually sign the statement.

   IS concurs with this recommendation. The Technical Support Supervisor, in concert with the Daily Operations Team, will work with the City's Legal and Human Resource Systems departments to formulate and implement a confidentiality document within Information Systems.

   Responsible Party - Technical Support Supervisor
   Completion Date – June 30, 2004

9. Develop and document a procedure to be followed when a request is submitted to reset a user password.

   IS concurs with this recommendation. The Applications Development Director will work on the development of a program that involves a series of pre-defined, individualized questions that our staff can ask of the requestor to establish identity. This program will provide consistency and strong control over the process.

   Responsible Party - Applications Development Director
   Completion Date – March 30, 2004

10. Create a process that requires all inquiries be logged.

    IS concurs with this recommendation. The Technical Support Supervisor will develop a methodology for capturing ACD calls.

    Responsible Party - Technical Support Supervisor
    Completion Date – March 30, 2004

11. Investigate improvements in the HEAT system.

IS concurs with this recommendation and does maintain an on-going relationship with the HEAT software vendor to pursue new features in their product. As participating members in the HEAT Users Group (HUG) and attendees at the annual HEAT User Conference, we have the ability to make known our requirements and suggestions for product improvements to the vendor's senior management. The Enterprise Systems Integrator will continue to test and implement those HEAT enhancements and upgrades that provide a benefit to the City.

Responsible Party - Enterprise Systems Integrator
Completion Date – As released by Vendor, and On-going

12. Investigate use of individuals within user departments who can provide first-line support and assist Help Desk staff with troubleshooting in situations where local resources could replace the need of dispatching a Technician into the field.

IS concurs with this recommendation. The CIO will investigate the use of designated individuals within departments with senior department management.

Responsible Party – CIO & General Manager, Information Systems
Completion Date – June 30, 2004

13. Establish a process in which technicians can submit suggestions for improvement in service delivery and encourage communications between management and line employees.

IS concurs with this recommendation, and actively encourages this type of communication as a standard business practice. The Technical Support Supervisor will provide time for this purpose during the regular monthly staff meetings and in one-on-one sessions with technicians. In addition, a "feedback form" will be developed and made available to all IS staff for submitting suggestions within the department.

Responsible Party - Technical Support Supervisor
Completion Date – November 1, 2003 for the Feedback form, and On-going

14. Develop and document performance expectations for customer satisfaction and implement a survey process that solicits feedback.

IS concurs with this recommendation. The Technical Support Supervisor, in concert with the Daily Operations Team, will develop goals for this item, and document a process for measuring customer satisfaction.

Responsible Party - Technical Support Supervisor
Completion Date – March 30, 2004

15. Restrict the number of employees having administrative rights in HEAT.

IS concurs with this recommendation. The Technical Support Supervisor will review the number of staff having such rights with the Daily Operations Team annually to assure that the number of staff is kept to a minimum that is consistent with operational and managerial needs.

Responsible Party - Technical Support Supervisor
Completion Date – Annual (June 30)